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P.S. Your photographs are sharp and have good contrasts. I am sure you will soon overcome what technical snags still remain.

Dear Lederberg,

Many thanks for allowing me to share in the pleasure of looking at your interesting coli preparations.

The chromatin structures of H 226 are impressively larger and optically better resolved than those in the haploid strain. Murray and I both feel that some of the bacteria in the picture of H 226 look indeed more like B.cereus than anything we are used to find in ordinary strains of E.coli. Nevertheless, the number of chromatinic complexes per bacterium and the number and mode of arrangement of rodlets and granules in individual complexes does not seem to exceed what is normally found in large bacteria. A glance at figs. 60 and 61 on plate II of B.Delaporte's article in Adv.i.Genetics III,(1950) will bear this out. I have indicated with , and what I believe to be bacteria with comparable chromatinic configurations in your two photographs. "cf.fig.3,1944" and "figs.5,6 1944" refers to plate 5 of my 1944 paper in the J.Hyg. In short, I think there is probably the same number of granules and dumbbells per nuclear structure in both forms and that the two strains differ only in size.

I enclose a picture of S.sonnei, from a preparation by Murray, as a further illustration that the H 226-type of nuclear structure is similar to what is normally found in relatively large, but presumably haploid, bacteria. The preparation had not been hydrolysed and was stained with thionine, hence the nuclei are shown in relief. Owing to the presence of about 7 mcg/ml of chloromycetin in the medium the arrangement of the nuclear structures in these cells is, in places, slightly abnormal (you will note incipient snake formation) but the detail of individual nuclear complexes is still the same as in normal material.

Are you satisfied that the preparation of K 12 shows all there is to be seen ? The photograph looks a bit as if, after the osmium, the cells had not been allowed to dry, and thereby flatten out, long enough before being fixed with alcohol. Fully flattened cells might show detail more closely resembling, en miniature, the chromatin structures of H 226.

Hoping that my impressions are not too much at variance with your own conclusions and with renewed thanks

sincerely yours

C. Robinow